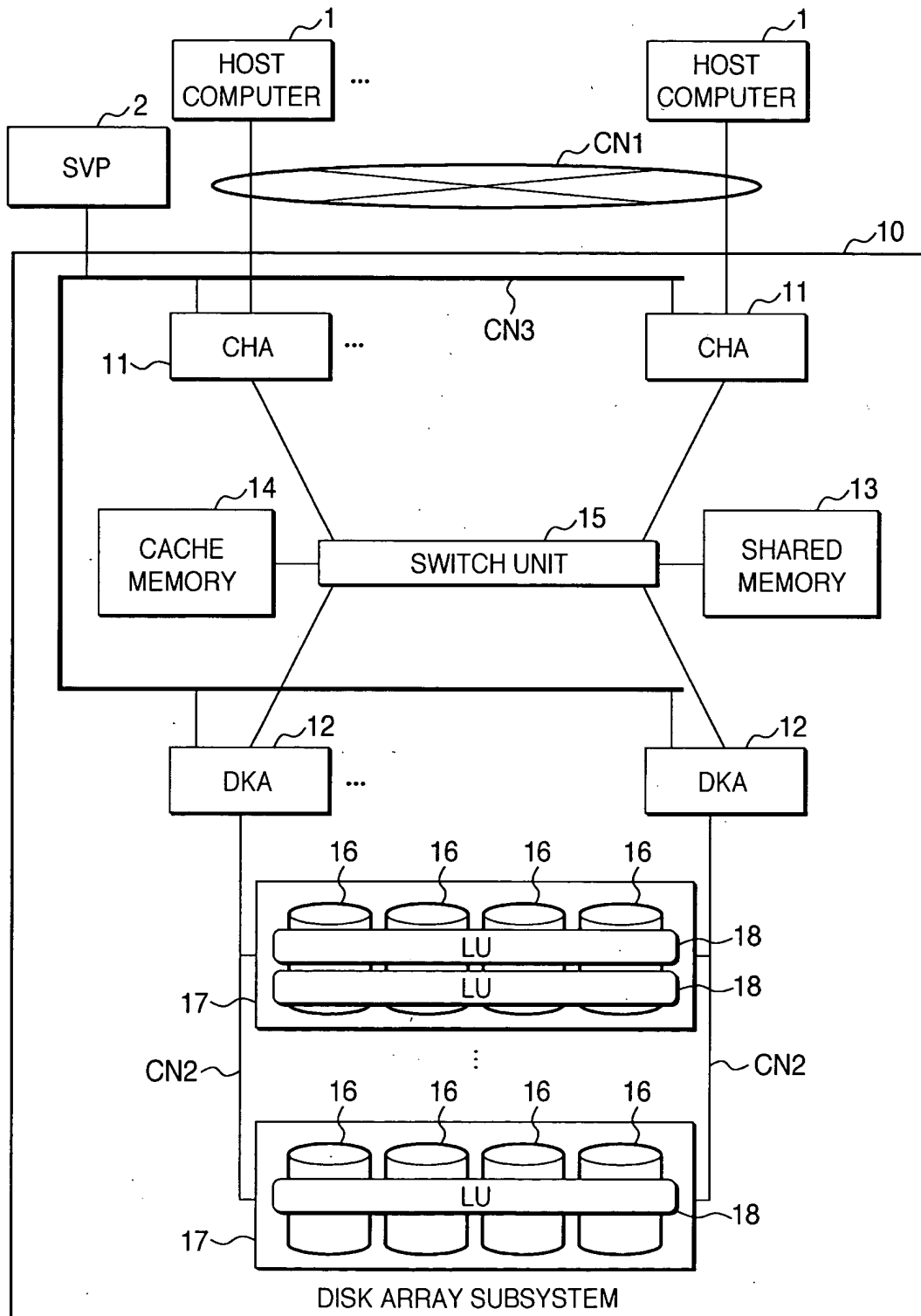


1/29

FIG. 1



2/29

FIG. 2A

T1

GROUP#	VOLUME#	DISK#	RAID LEVEL
1	1, 2, 3	1, 2, 3, 4	RAID5
2	4, 5, 6	5, 6, 7, 8	RAID5
3	7, 8, 9, 10	9, 10, 11, 12	RAID1
4	11, 12	13, 14, 15, 16	RAID1
5	NULL	17, 18, 19, 20	RAID5
⋮	⋮	⋮	⋮

FIG. 2B

T1

GROUP#	VOLUME#	DISK#	RAID LEVEL
1	1, 2, 3	1, 2, 3, 4	RAID5
2	4, 5, 6	5, 6, 7, 8	RAID5
3	7, 8, 9, 10	9, 10, 11, 12	RAID1
4	11, 12	13, 14, 15, 16	RAID1
5	13, 14, 15	17, 18, 19, 20	RAID5
⋮	⋮	⋮	⋮

3/29

FIG. 3A

T2

PRIMARY VOLUME#	SECONDARY VOLUME#	PAIRING STATUS	DIFFERENTIAL BITMAP
4	7	DUPLEX	010000100000...
5	8	DUPLEX	100000010000...

FIG. 3B

T2

PRIMARY VOLUME#	SECONDARY VOLUME#	PAIRING STATUS	DIFFERENTIAL BITMAP
4	7	DUPLEX	010000100000...
5	8	DUPLEX	100000010000...
1	13	UPDATE DATA BEING BACKED UP	110000100011...
2	14	UPDATE DATA BEING BACKED UP	100001000000...
3	15	UPDATE DATA BEING BACKED UP	000000000000...

4/29

FIG. 4A

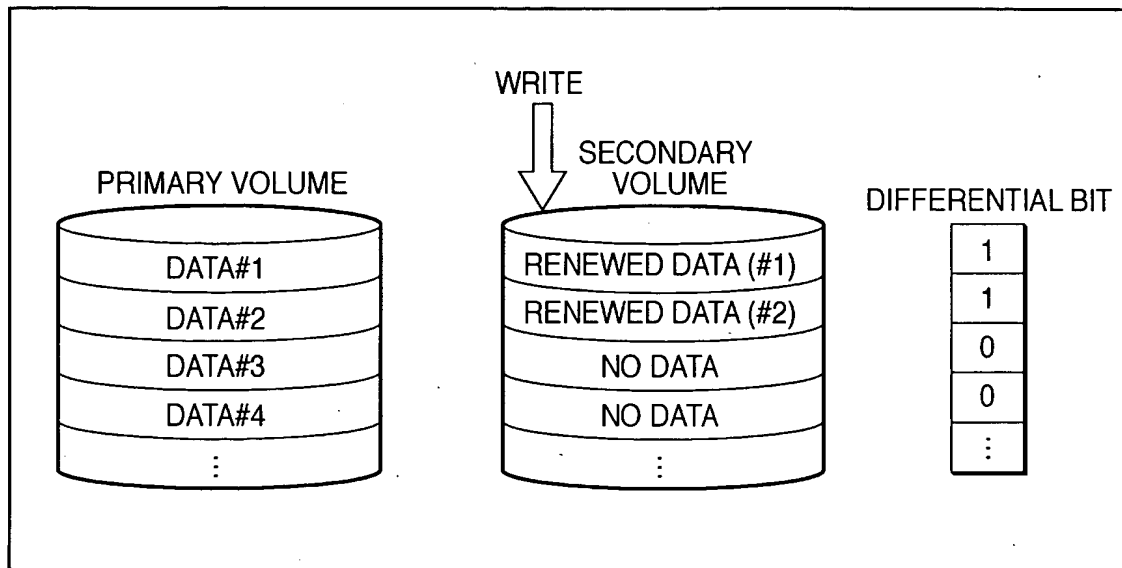
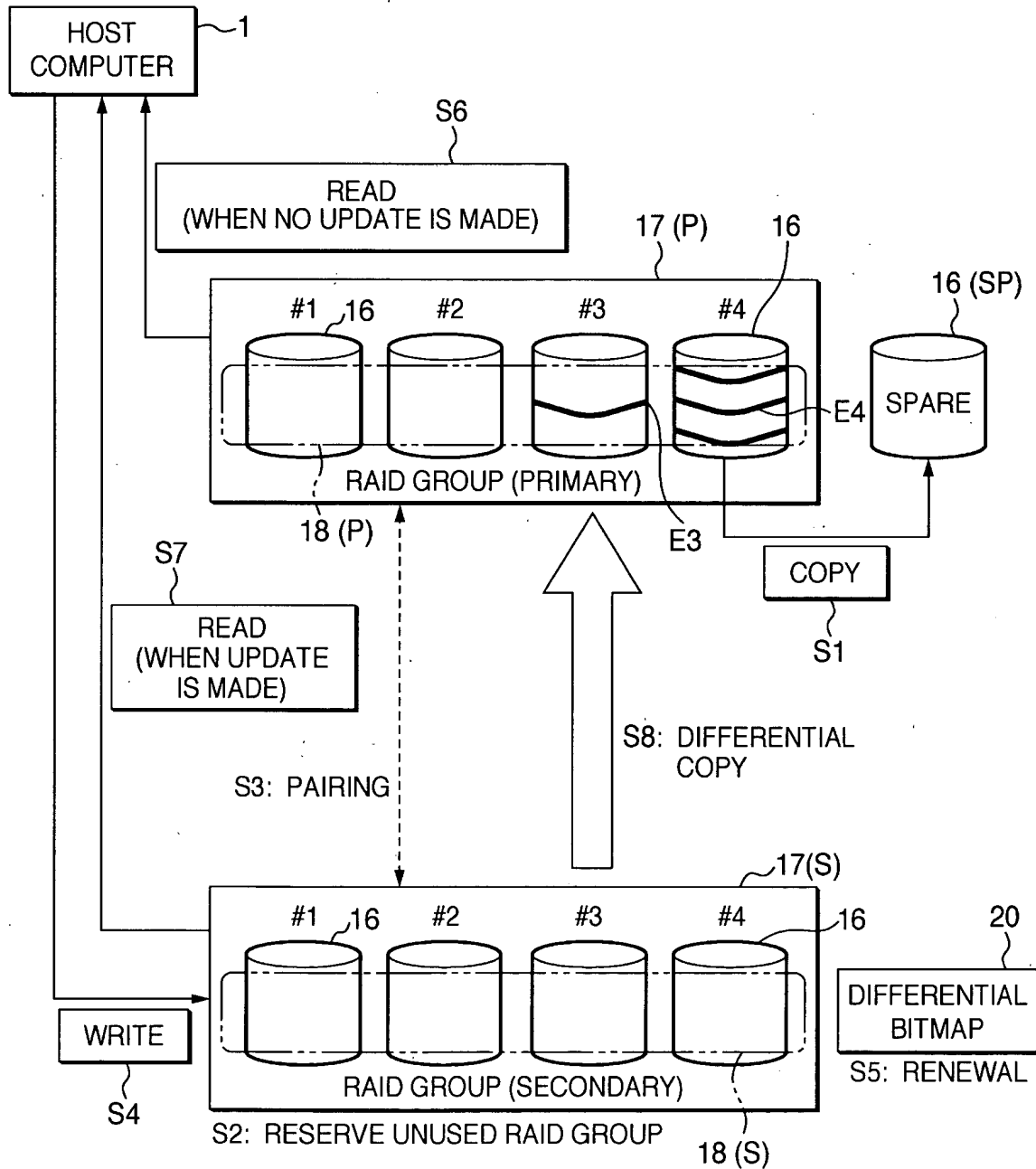


FIG. 4B



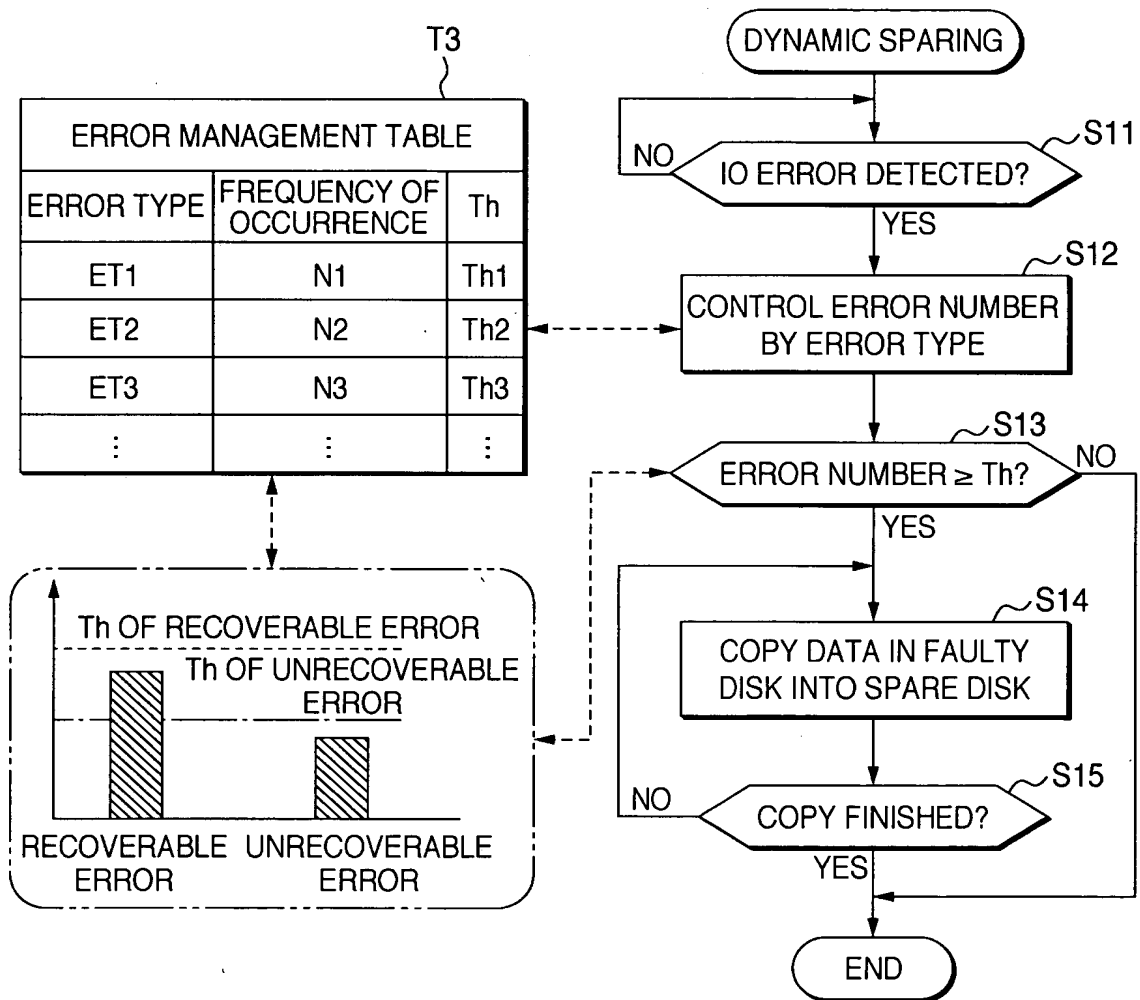
5/29

FIG. 5



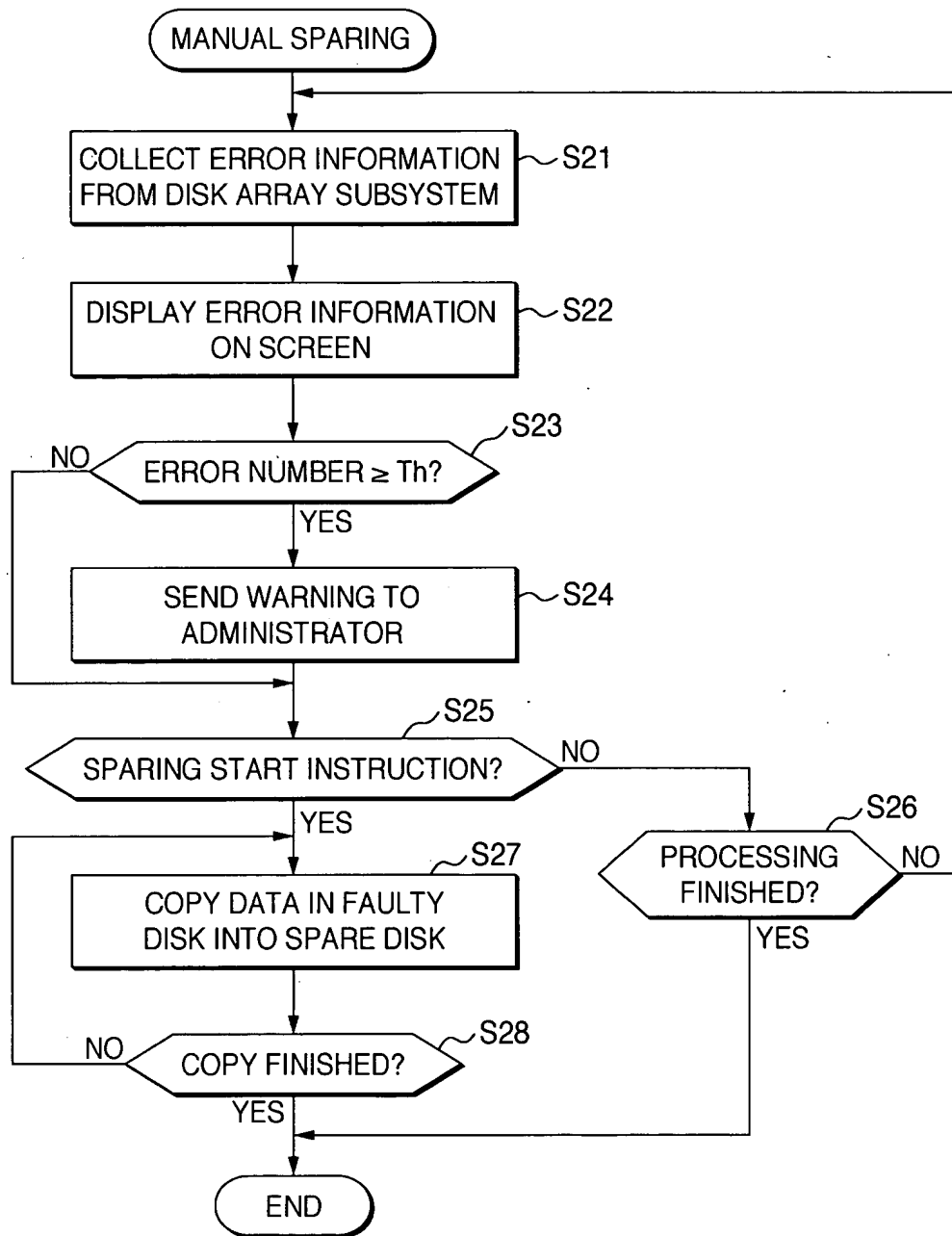
6/29

FIG. 6



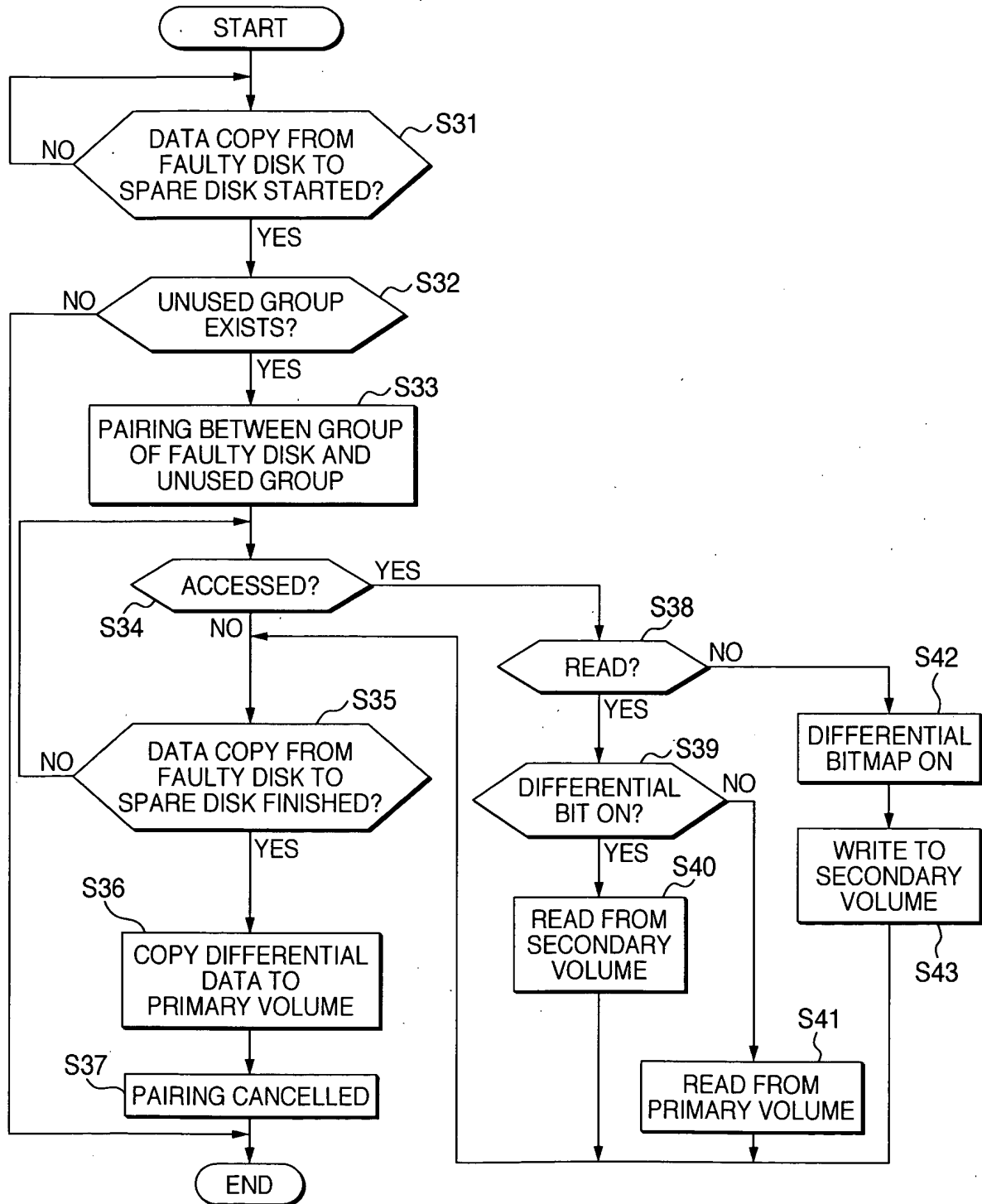
7/29

FIG. 7



8/29

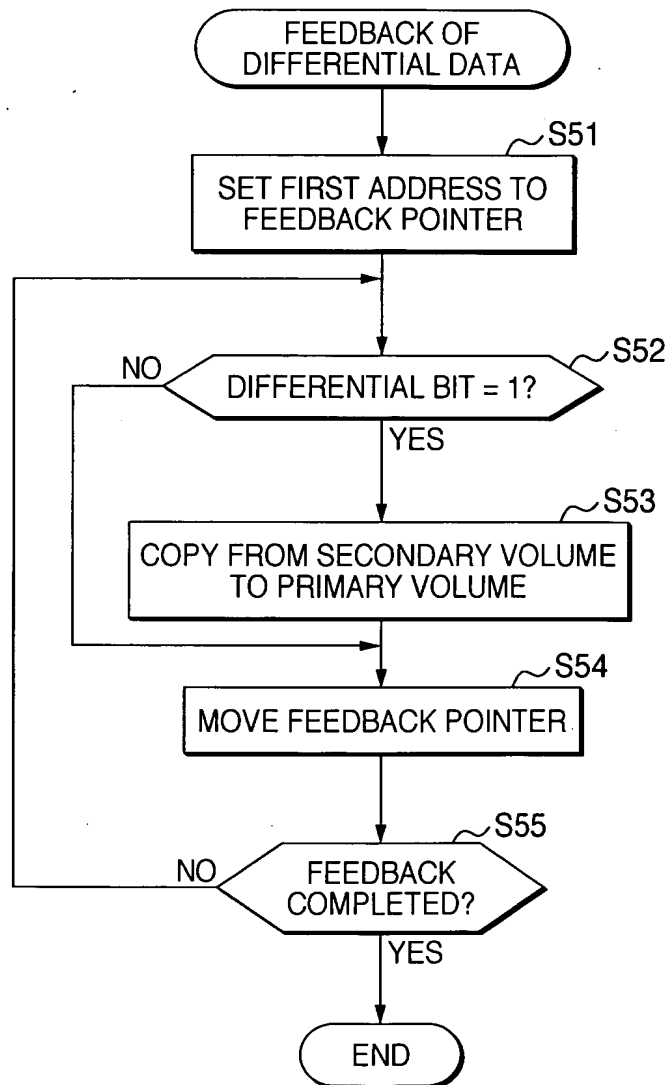
FIG. 8





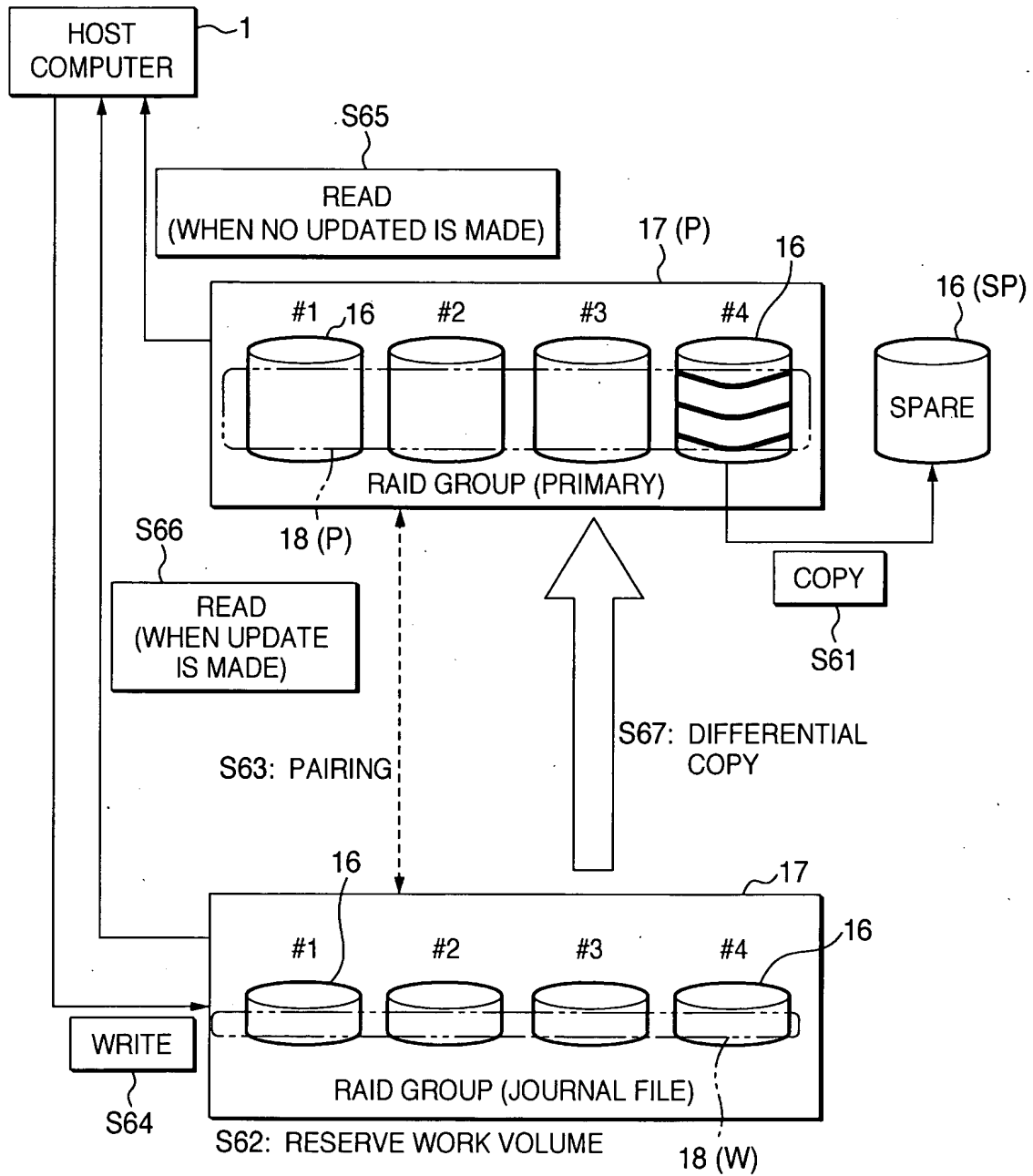
9/29

FIG. 9



10/29

FIG. 10



11/29

FIG. 11A

T4

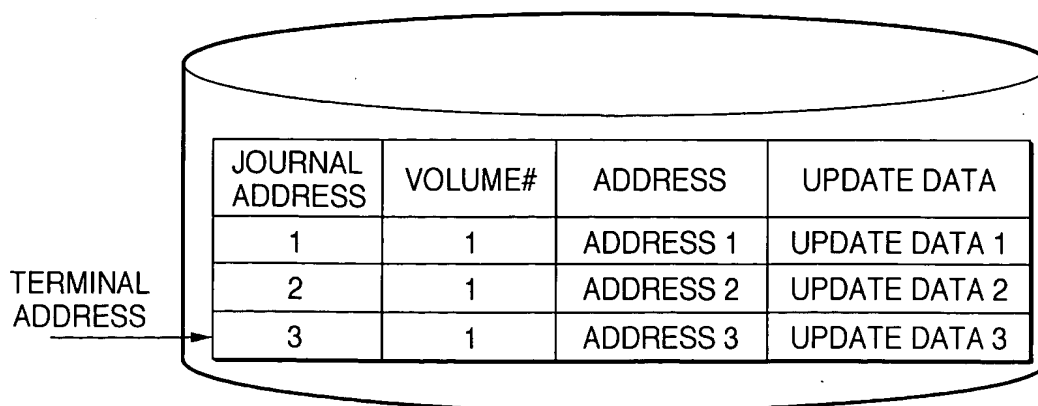
WORK VOLUME#	CAPACITY	PRIMARY VOLUME#	TERMINAL ADDRESS	DIFFERENTIAL BITMAP
10	3GB	NULL	NULL	0000000000 ...
11	3GB	NULL	NULL	0000000000 ...
12	3GB	NULL	NULL	0000000000 ...

FIG. 11B

T4

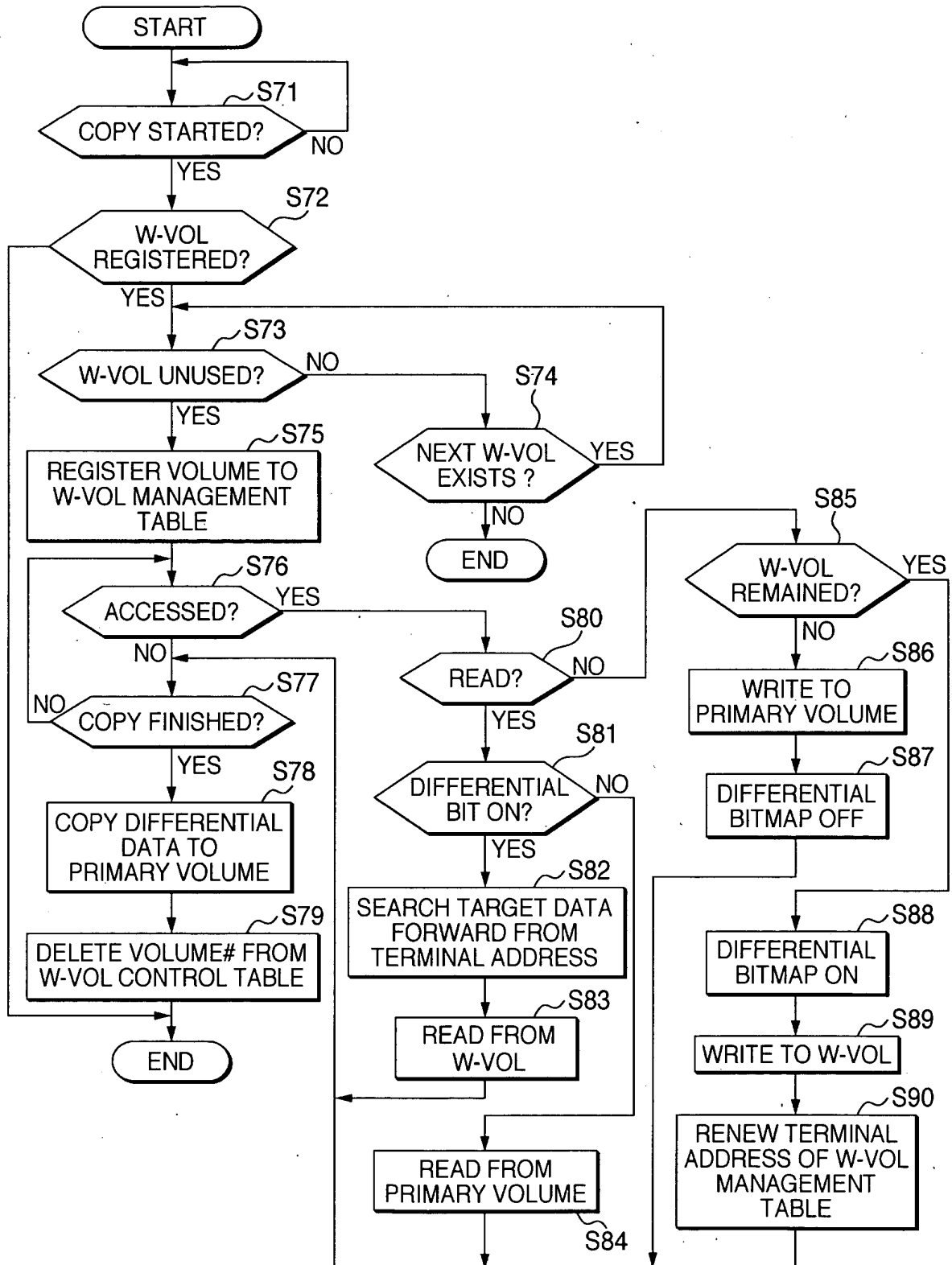
WORK VOLUME#	CAPACITY	PRIMARY VOLUME#	TERMINAL ADDRESS	DIFFERENTIAL BITMAP
10	3GB	1	3	1110000000 ...
11	3GB	2	NULL	0000000000 ...
12	3GB	3	NULL	0000000000 ...

FIG. 11C



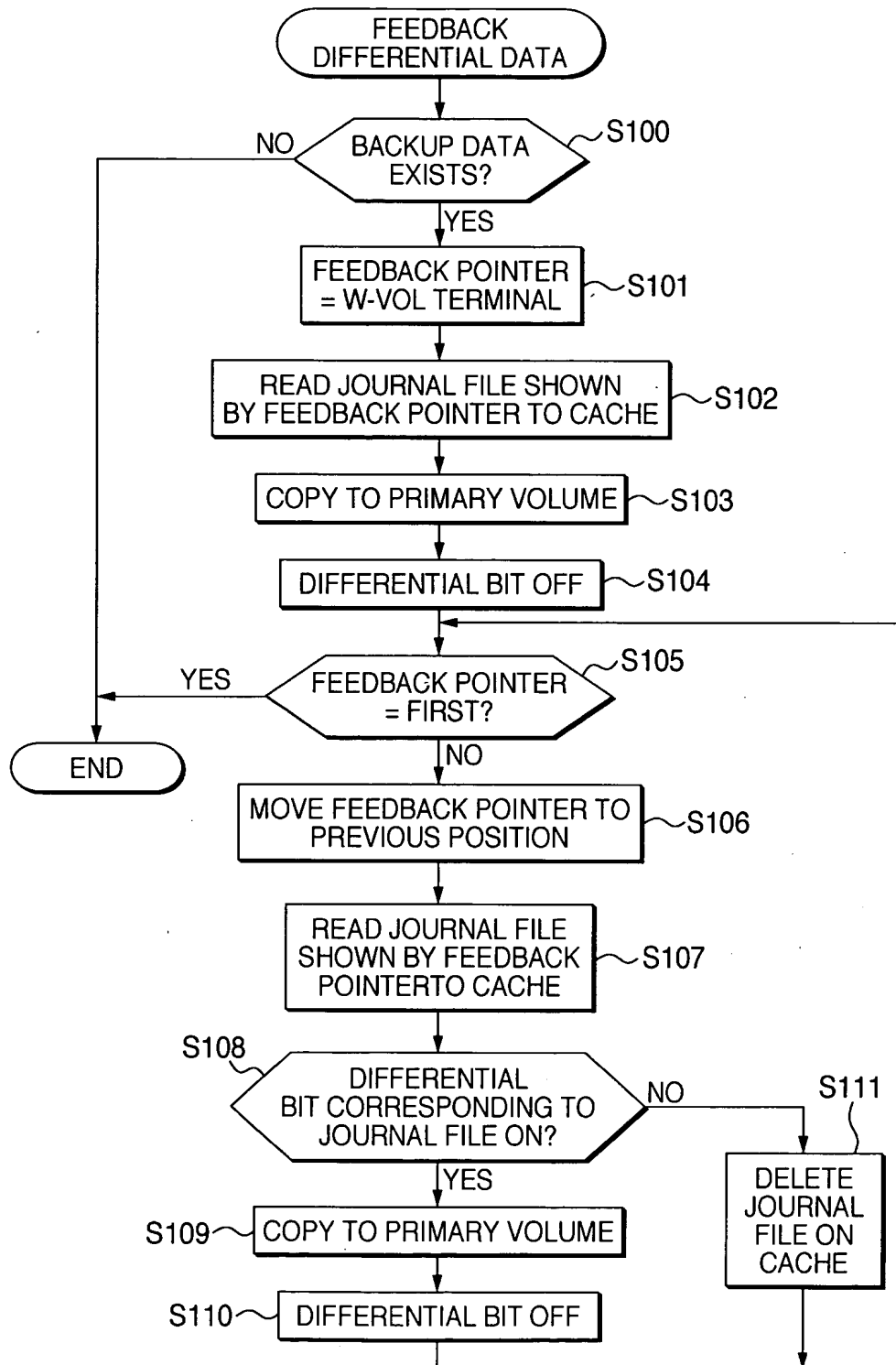
12/29

FIG. 12



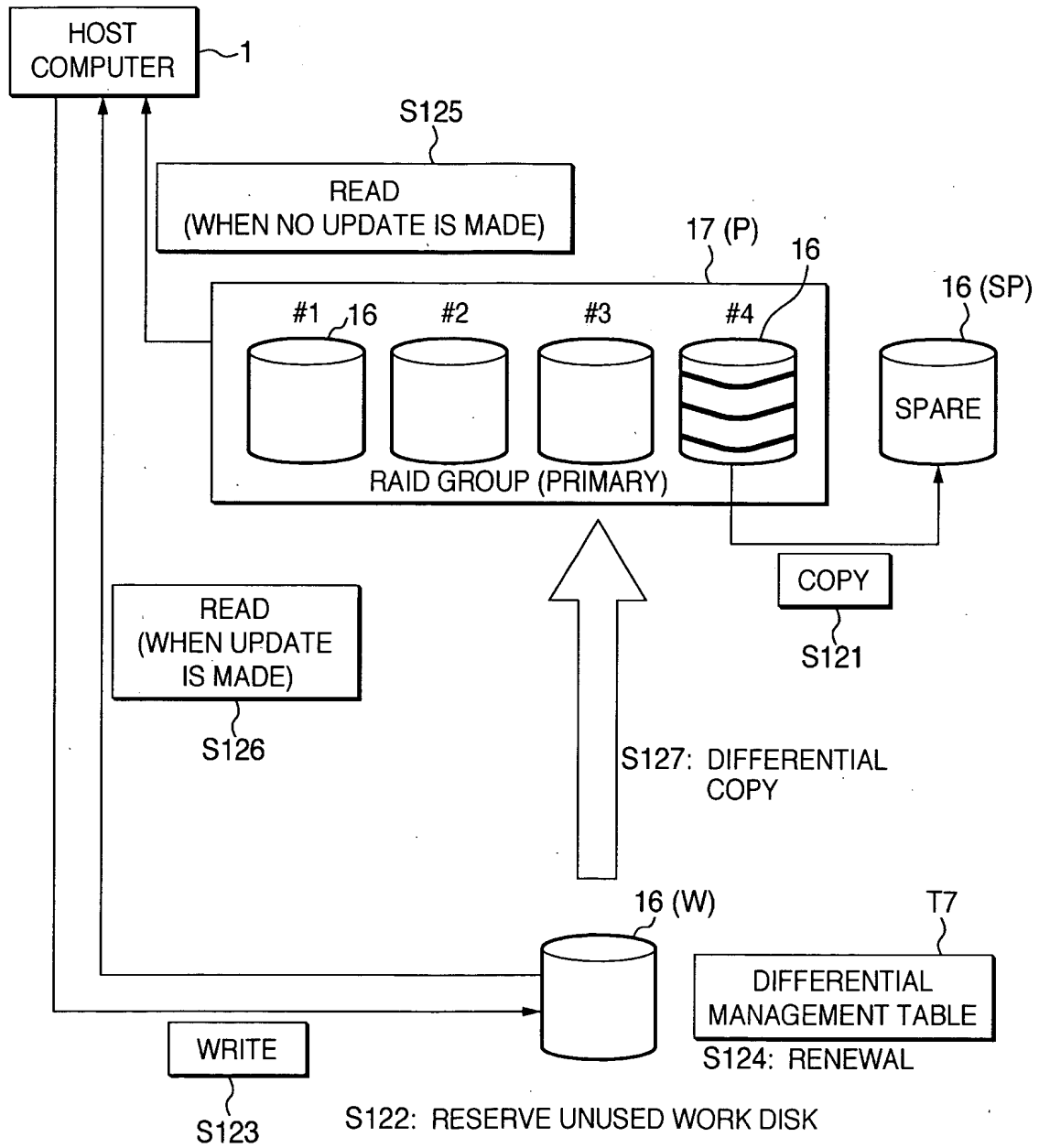
13/29

FIG. 13



14/29

FIG. 14



15/29

FIG. 15A

T5

DISK#	CAPACITY	STATUS
1	18GB	RENEWED DATA BEING BACKED UP
2	18GB	RENEWED DATA BEING BACKED UP
3	18GB	RENEWED DATA BEING BACKED UP
4	18GB	RENEWED DATA BEING BACKED UP
5	18GB	NULL
⋮	⋮	⋮

FIG. 15B

T6

DISK#	CAPACITY	STATUS	MAIN DISK#	TERMINAL ADDRESS
60	18GB	UNUSED	NULL	NULL
61	18GB	UNUSED	NULL	NULL

FIG. 15C

T6

DISK#	CAPACITY	STATUS	MAIN DISK#	TERMINAL ADDRESS
60	18GB	IN USE	1, 2, 3, 4	6
61	18GB	UNUSED	NULL	NULL

16/29

FIG. 16

T7

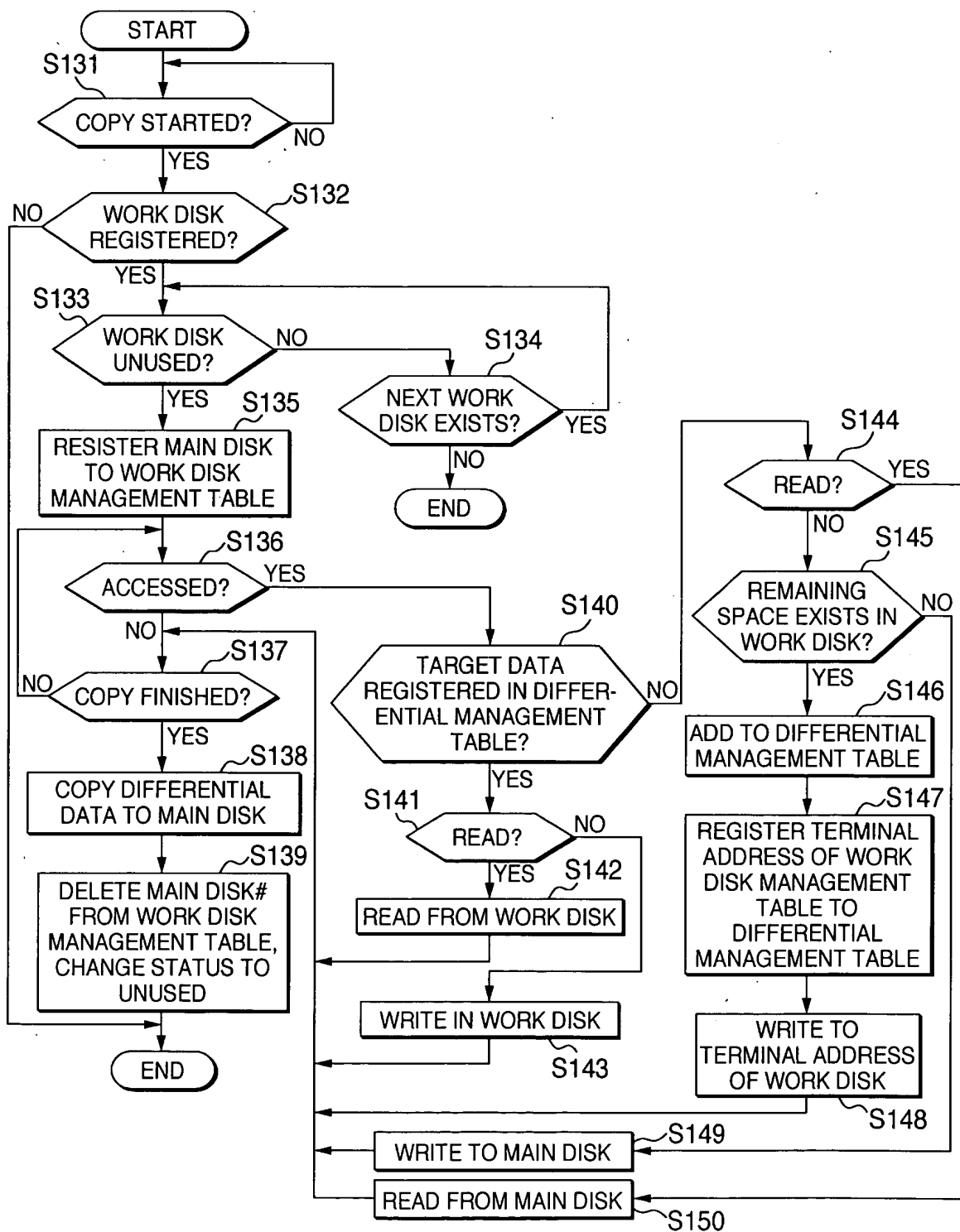
MAIN DISK#	MAIN DISK ADDRESS	WORK DISK#	WORK DISK ADDRESS
1	1	60	1
1	2	60	2
2	5	60	3
2	2	60	4
2	6	60	5
3	3	60	6

TERMINAL ADDRESS →



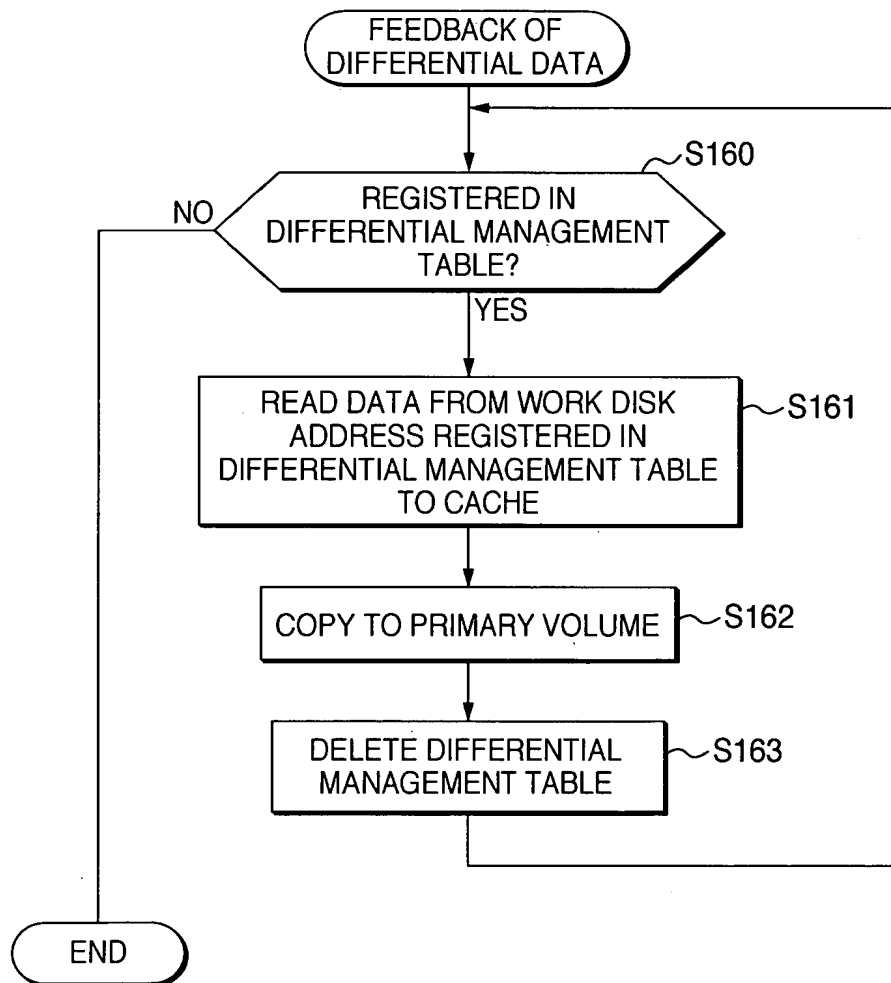
17/29

FIG. 17



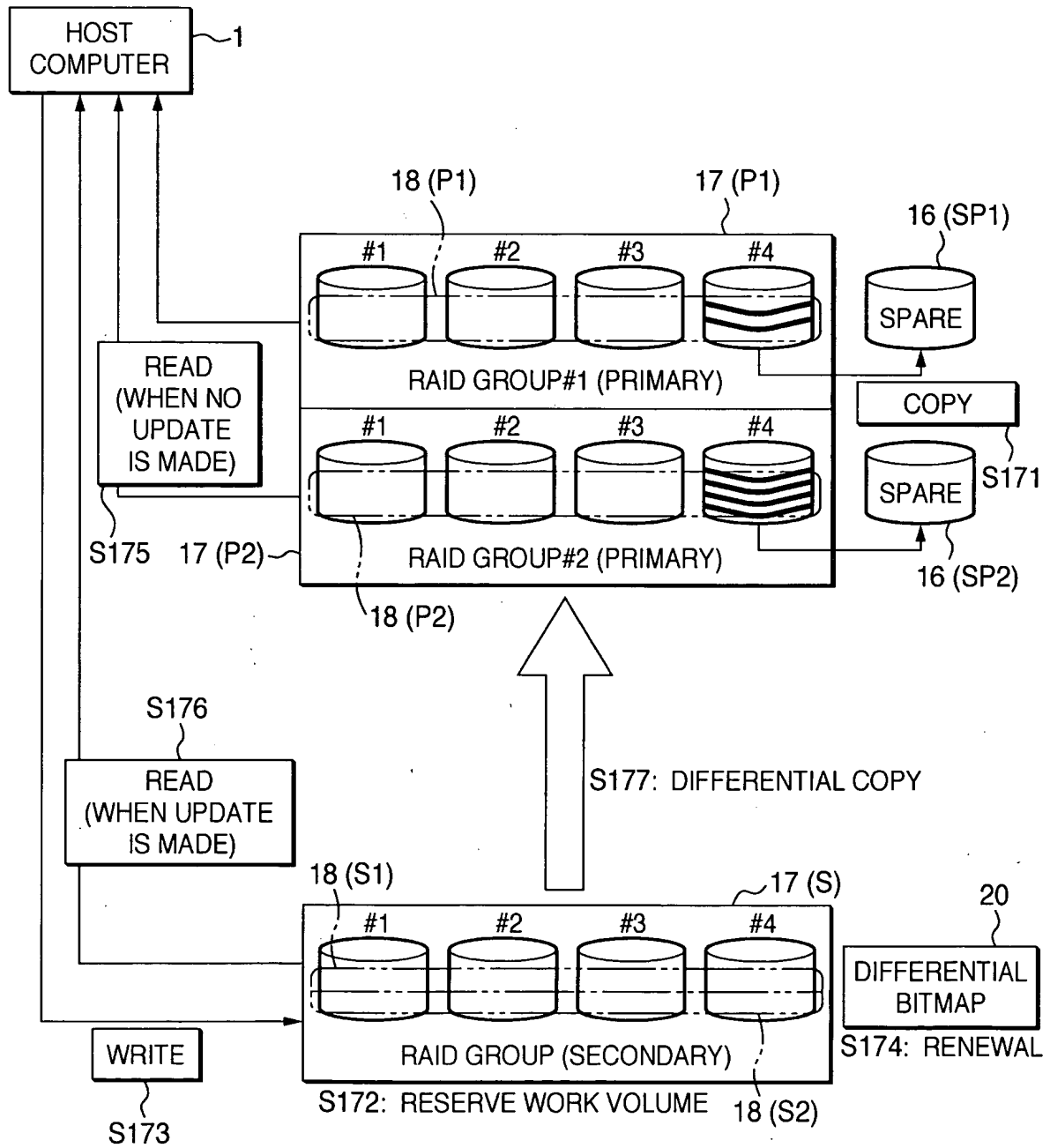
18/29

FIG. 18



19/29

FIG. 19



20/29

FIG. 20A

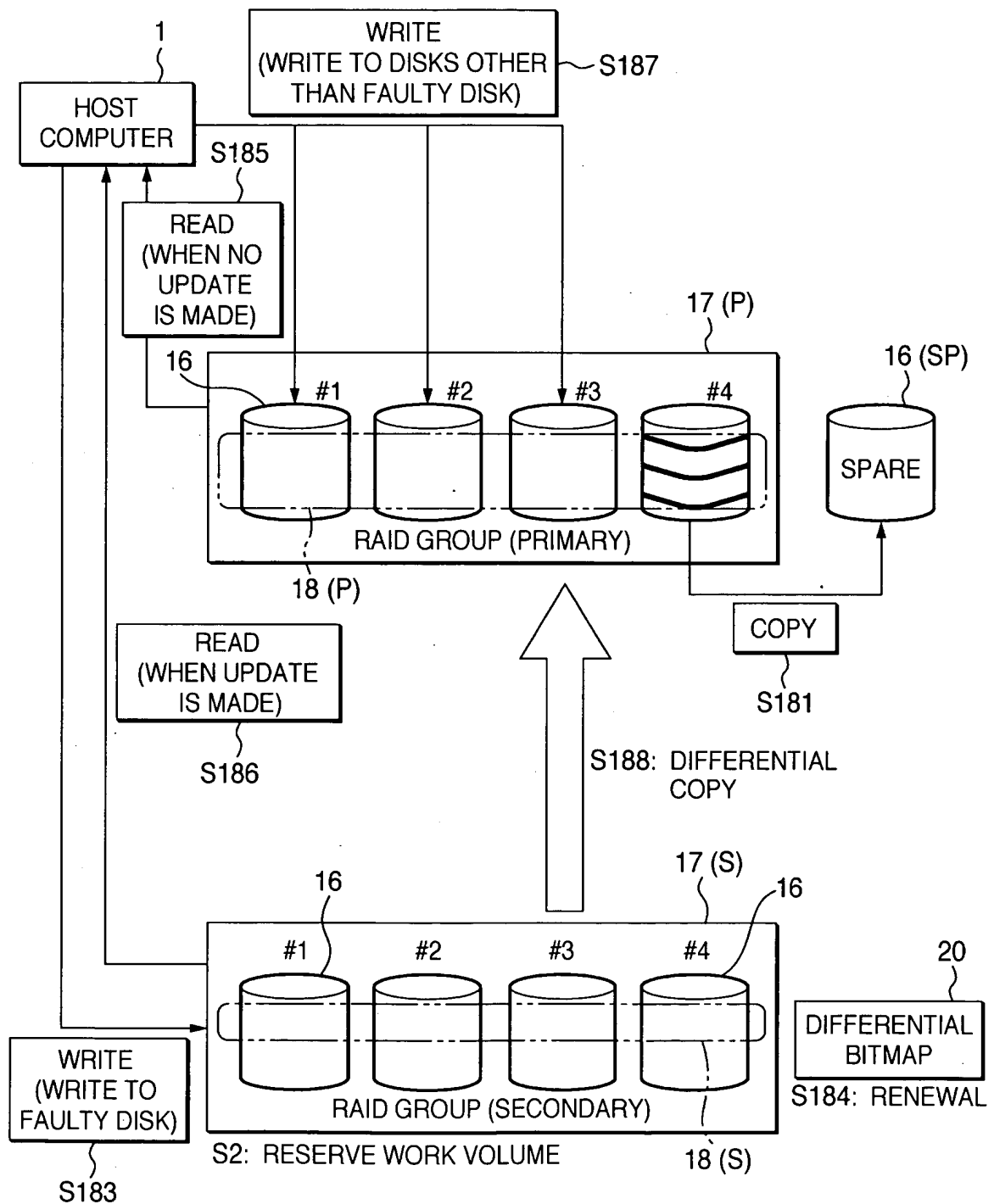
T4

WORK VOLUME #	CAPACITY	MAIN VOLUME #	TERMINAL ADDRESS	DIFFERENTIAL BITMAP
10	3GB	1, 4	3	1110000000...
11	3GB	2, 5	NULL	0000000000...
12	3GB	3, 6	NULL	0000000000...

FIG. 20B

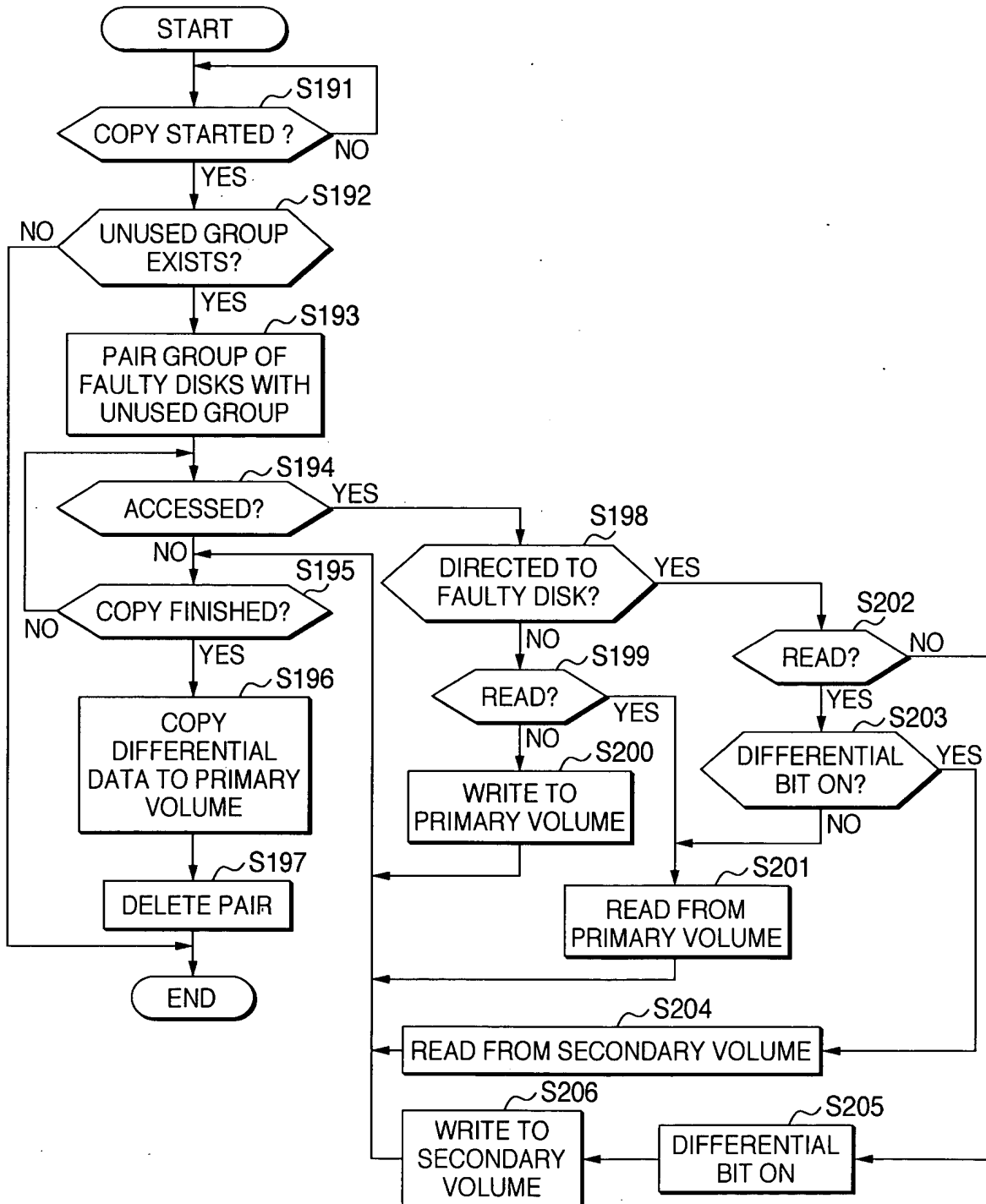
T6

DISK#	CAPACITY	STATUS	MAIN DISK#	TERMINAL ADDRESS
60	18GB	IN USE	1, 2, 3, 4, 5, 6, 7, 8	6
61	18GB	UNUSED	NULL	NULLL



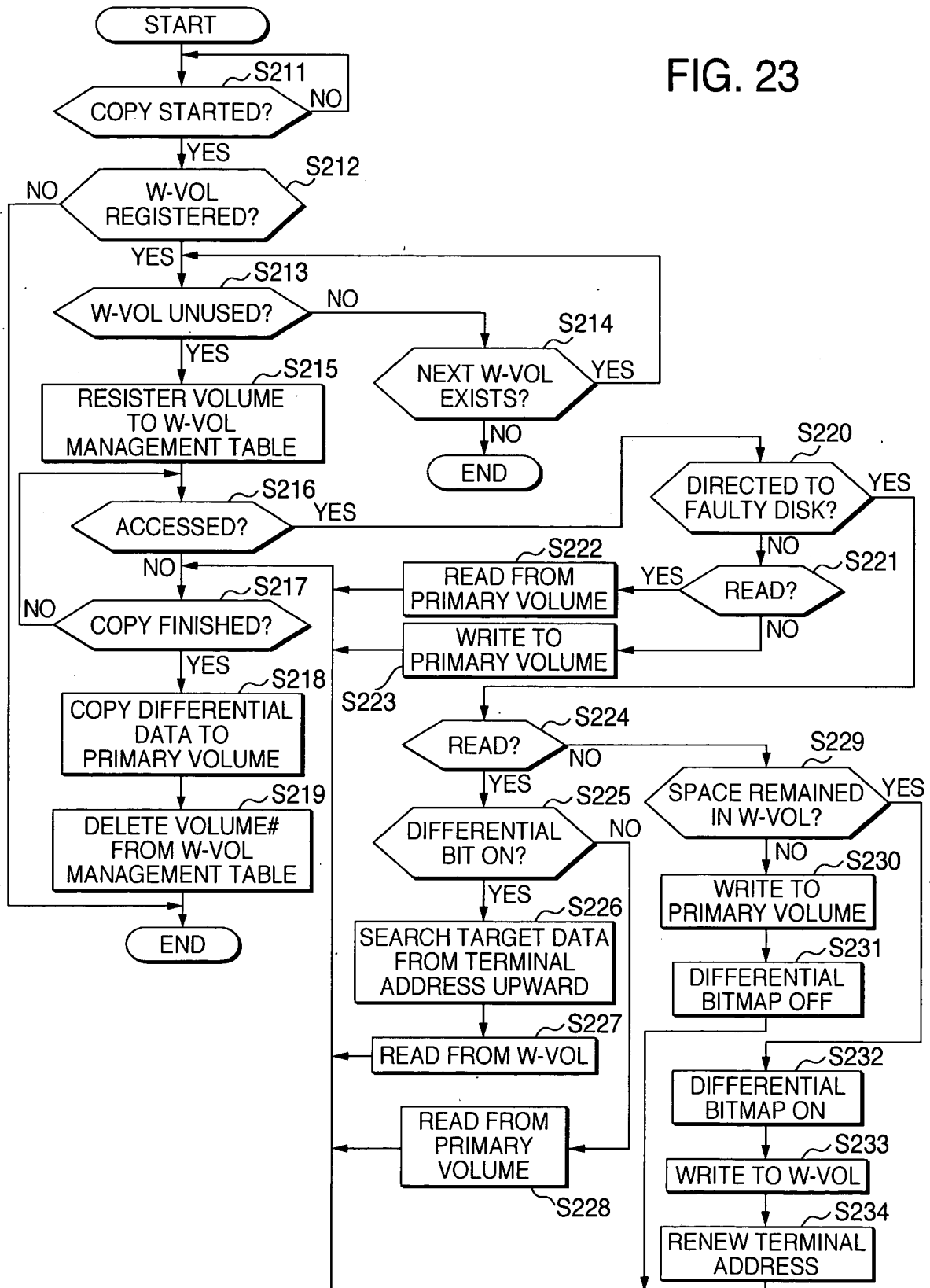
22/29

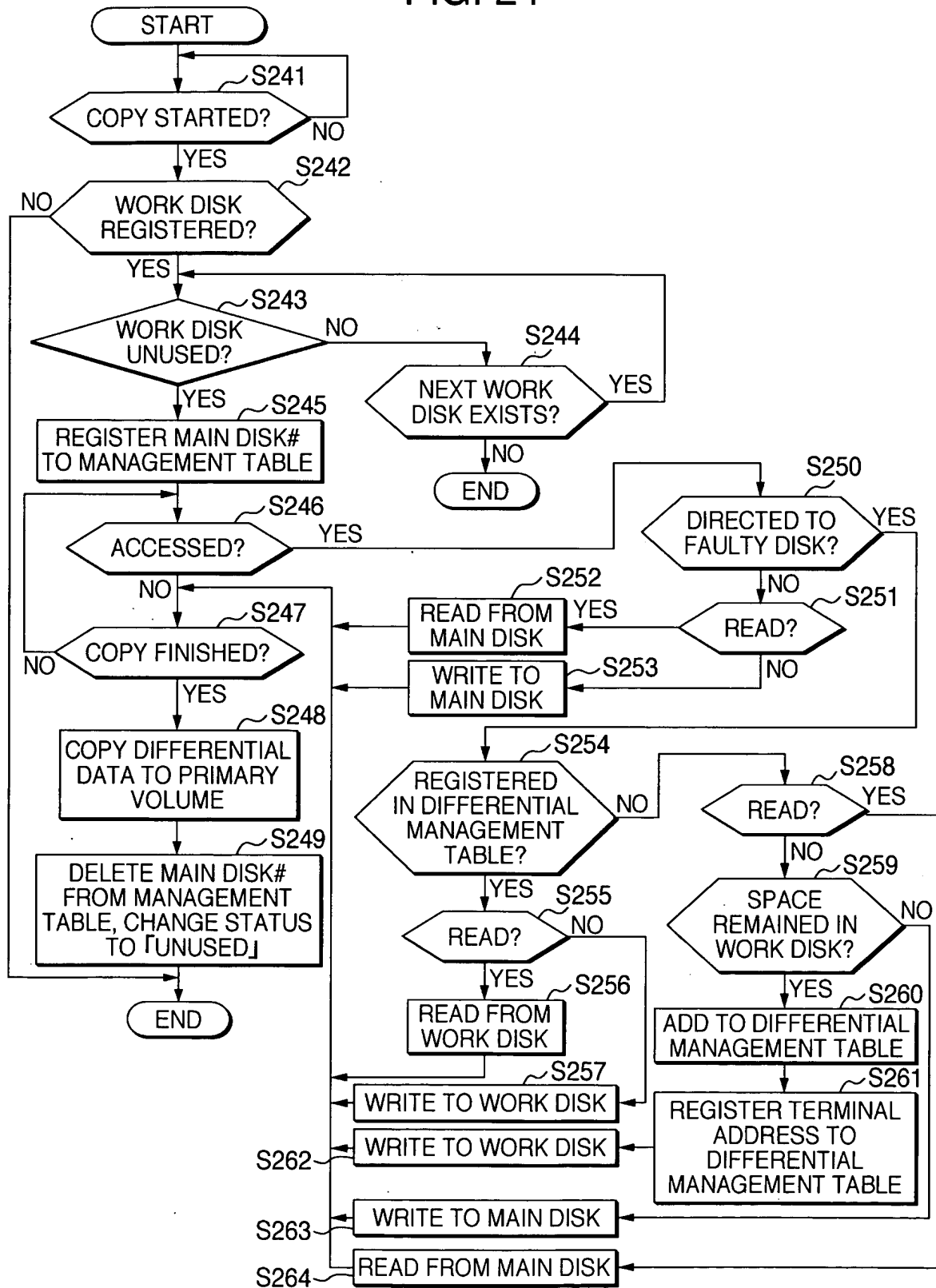
FIG. 22



23/29

FIG. 23

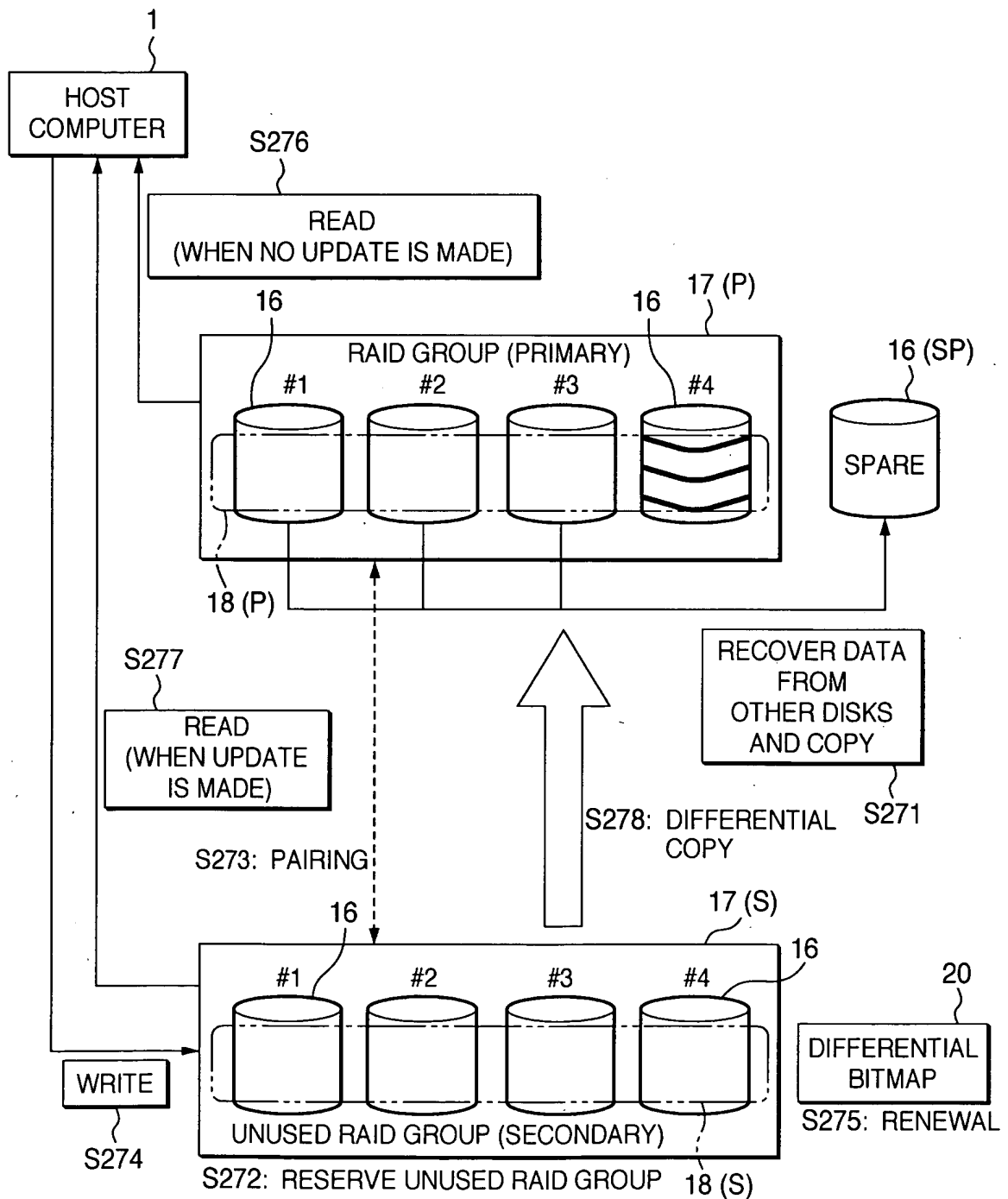


24/29  
FIG. 24



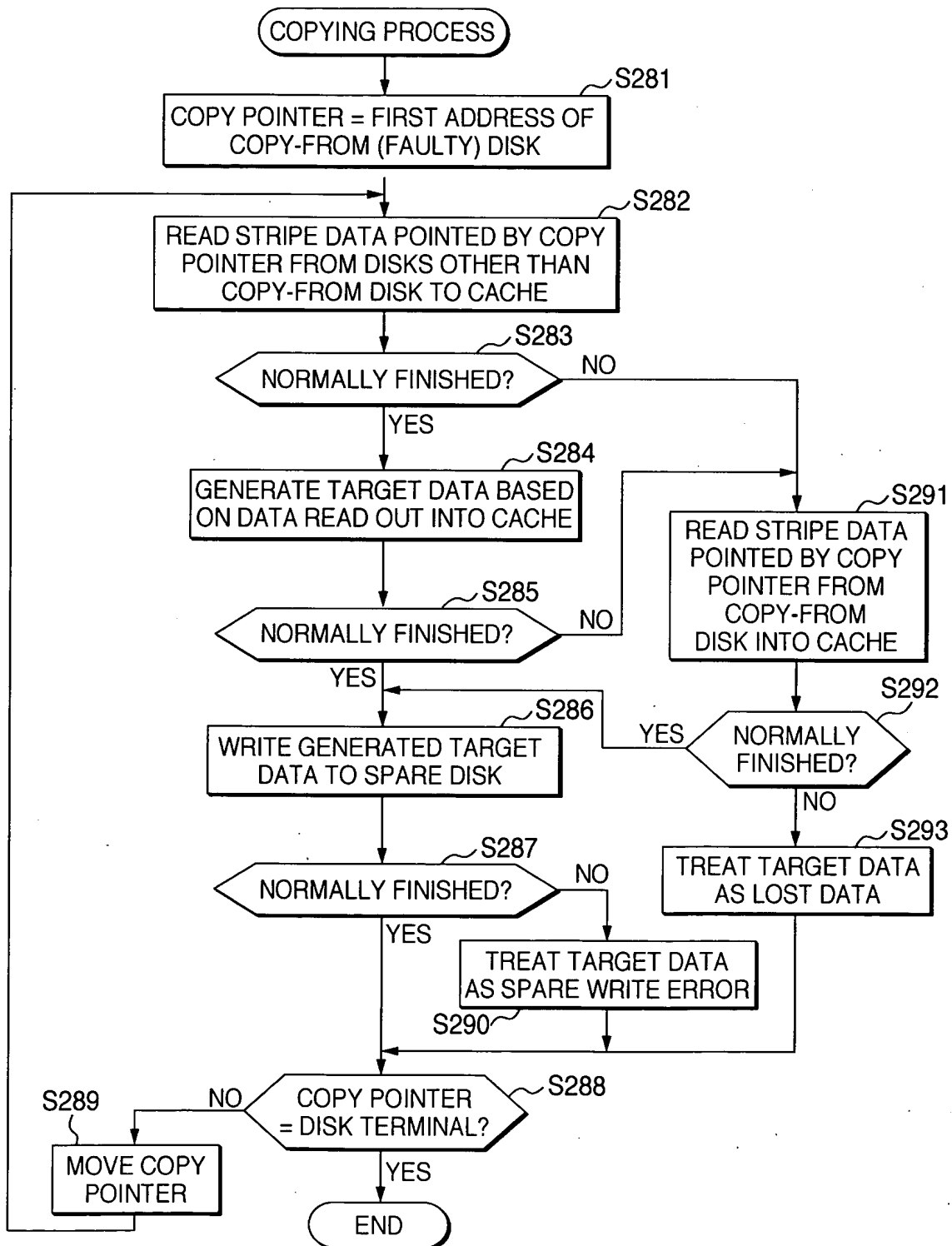
25/29

FIG. 25



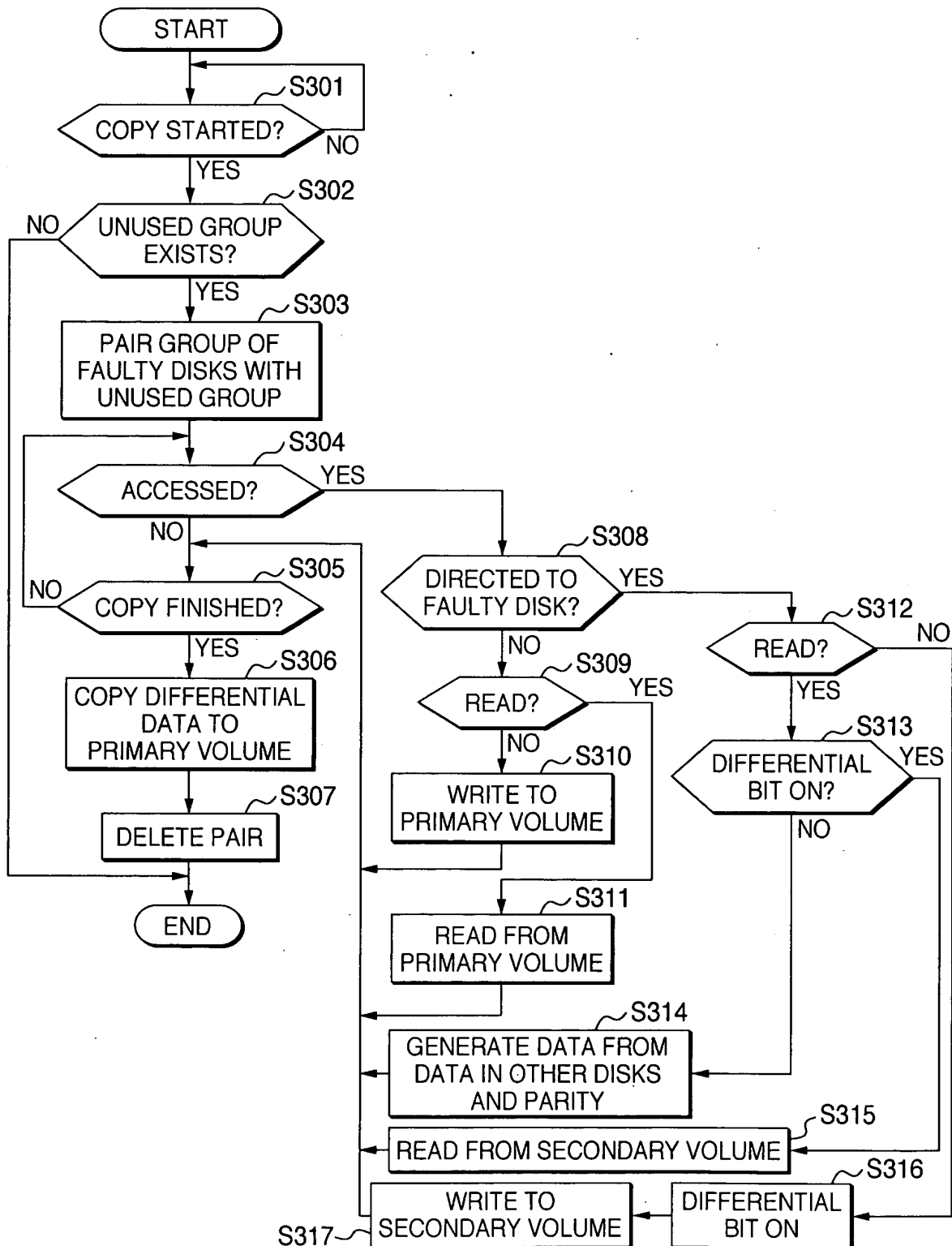
26/29

FIG. 26



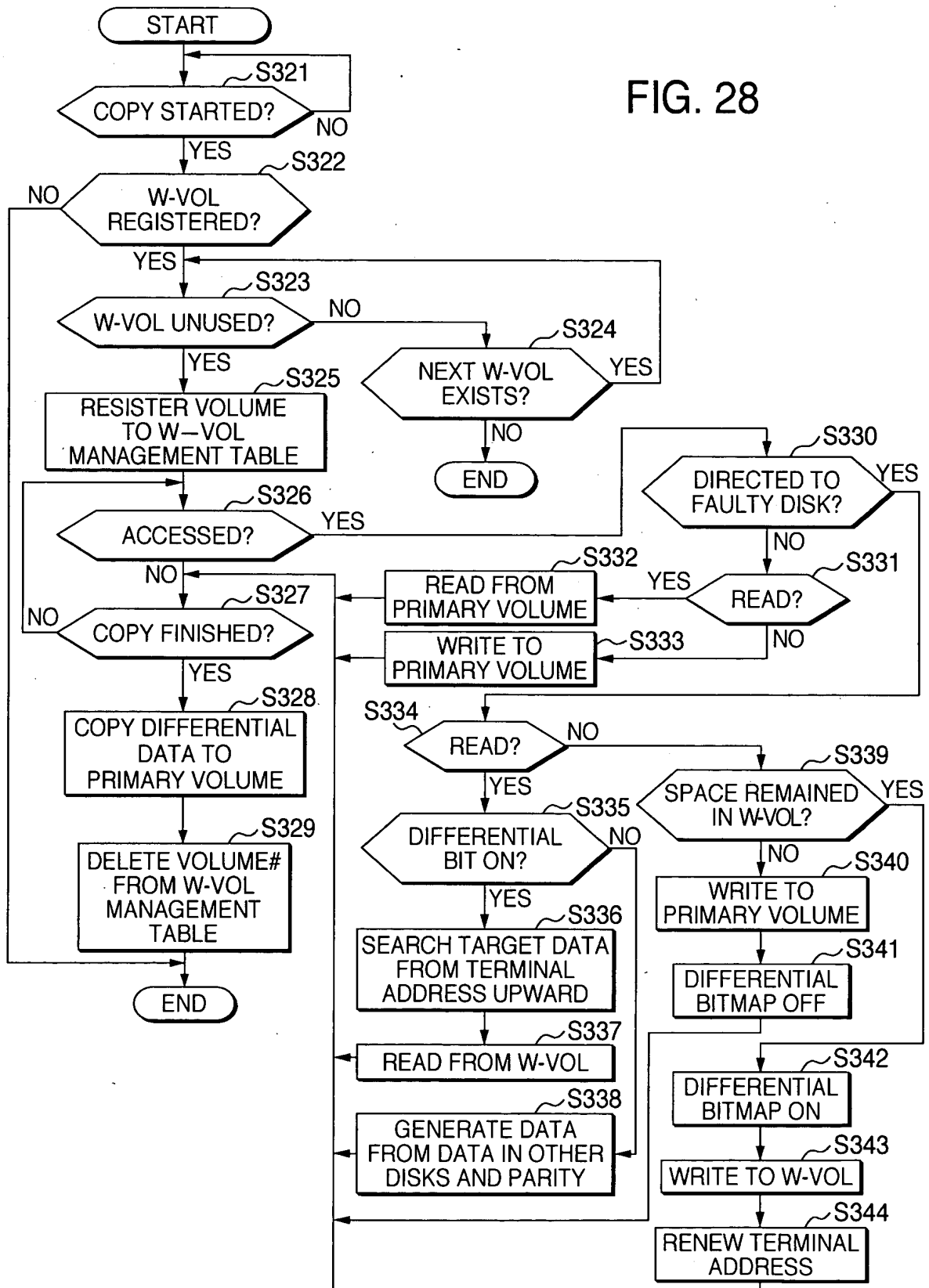
27/29

FIG. 27



28/29

FIG. 28



29/29

FIG. 29

